

REMARKS

Applicant has reviewed the Office Action mailed on September 4, 2003 as well as the art cited. Claims 1-57 are pending in this application.

Rejections Under 35 U.S.C. § 102

Claims 1, 2, 4, 5, 14-16, 46-48 were rejected under 35 USC § 102(b) as being anticipated by Smith et al, (U.S. Patent No. 6,046,897). A 102 rejection requires a single piece of art teach explicitly or inherently every element of a claim.

Claim 1

Regarding independent Claim 1, not every element of Claim 1 is taught by the Smith et al. reference. For example, Claim 1 includes the element, "a charge pump for each electrostatic bus line to precharge its associated electrostatic bus line to an associated predetermined voltage level, wherein pre-charging each electrostatic bus line to its predetermined voltage level reduces transient currents on the signal bonding pads associated with capacitive charging of the electrostatic bus lines when the external voltage signal levels are beyond normal supply voltage ranges." The Smith et al. reference does not teach "a charge pump for each electrostatic bus line to precharge its associated electrostatic bus line to an associated predetermined voltage level, wherein pre-charging each electrostatic bus line to its predetermined voltage level reduces transient currents on the signal bonding pads associated with capacitive charging of the electrostatic bus lines when the external voltage signal levels are beyond normal supply voltage ranges," as is disclosed and claimed in Claim 1 of the present application. The Examiner cites 810 and 816 of the Smith et al. reference as a charge pump. However, 810 and 816 are described in the Smith et al. reference as diodes. Please See Column 12, lines 41-44 and lines 50-54 of the Smith et al. reference. This is not what is claimed in Claim 1 as reproduced above. Since not every element is taught by the Smith et al. reference a rejection under 102 was improper. Accordingly, the Applicant respectfully requests the withdrawal of the rejection of Claim 1 under 35 U.S.C. §102(b).

Moreover, since Claims 2-13 depend from and further define patentably distinct Claim 1, Applicant also respectfully requests the withdrawal of the rejection of these dependant claims. Further, since the applicant believes these dependant claims are allowable for the above reason, further arguments addressing other rejections may not have been put forth at this time. The Applicant, however, retains the right to address said additional arguments if a further response is required.

Claim 14

Regarding independent Claim 14, not every element of Claim 14 is taught by the Smith et al. reference. For example, Claim 14 includes the elements, “a first charge pump coupled to charge the first ESD bus line to a predetermined first voltage” and “a second charge pump coupled to charge the second ESD bus line to a predetermined second voltage.” The Smith et al. reference does not teach “a first charge pump coupled to charge the first ESD bus line to a predetermined first voltage” and “a second charge pump coupled to charge the second ESD bus line to a predetermined second voltage,” as is disclosed and claimed in Claim 14 of the present application. The Examiner cites 810 and 816 of the Smith et al. reference as a charge pump. However, 810 and 816 are described in the Smith et al. reference as diodes. Please See Column 12, lines 41-44 and lines 50-54 of the Smith et al. reference. This is not what is claimed in Claim 14 as reproduced above. Since not every element is taught by the Smith et al. reference a rejection under 102 was improper. Accordingly, the Applicant respectfully requests the withdrawal of the rejection of Claim 14 under 35 U.S.C. §102(b).

Moreover, since Claims 15-25 depend from and further define patentably distinct Claim 14, Applicant also respectfully requests the withdrawal of the rejection of these dependant claims. Further, since the applicant believes these dependant claims are allowable for the above reason, further arguments addressing other rejections may not have been put forth at this time. The Applicant, however, retains the right to address said additional arguments if a further response is required.

Claim 46

Regarding independent Claim 46, not every element of Claim 46 is taught by the Smith et al. reference. Claim 46 includes the element, “pre-charging each of the electrostatic discharge bus lines to a respective predetermined voltage level, wherein each predetermined voltage level is a voltage level beyond the signal voltage level expected to be applied to the integrated circuit.” Embodiments of the present invention, disclose an ESD protection scheme that can be used in ICs that occasionally operate above Vdd or below Vss. Please see Paragraphs [0005] and [0006] of the present invention. “When the ESD bus lines 45 and 47 are precharged to the desired voltages, steering diodes 10, 16, 20, 24, 40, 42, 44 and 46 remain in a reversed bias state during normal operations even if the voltage levels on the signal pads 14 and 22 are beyond the normal range of the supply voltages.” See paragraph [0033] of the present application. The Smith et al. reference relates to a segmented Bus architecture so that individual I/O pads may be reduced in size. Please see the Abstract of the Smith et al. reference. The Smith et al. reference does not teach “pre-charging each of the electrostatic discharge bus lines to a respective predetermined voltage level, wherein each predetermined voltage level is a voltage level beyond the signal voltage level expected to be applied to the integrated circuit,” (emphasis added) as is disclosed and claimed in Claim 46 of the present application. Since not every element is taught by the Smith et al. reference a rejection under 102 was improper. Accordingly, the Applicant respectfully requests the withdrawal of the rejection of Claim 46 under 35 U.S.C. §102(b).

Moreover, since Claims 47-48 depend from and further define patentably distinct Claim 46, Applicant also respectfully requests the withdrawal of the rejection of these dependant claims. Further, since the applicant believes these dependant claims are allowable for the above reason, further arguments addressing other rejections may not have been put forth at this time. The Applicant, however, retains the right to address said additional arguments if a further response is required.

Rejections Under 35 U.S.C. § 103

Claims 10-13, 22, 26-31, 33, and 34 were rejected under 35 USC § 103(a) as being unpatentable over Smith et al. in view of Ker et al. (U.S. Patent No. 6,144,542). A 103 rejection

requires a *prima facie* showing that the art reference suggests or provides motivation to modify or combine the reference to establish obviousness under 103. A *prima facie* showing of obviousness further requires that the prior art reference teach or suggest all of the claim limitations.

Claim 26

Regarding independent Claim 26, not every element of Claim 26 is taught by the Smith et al. reference or the Ker et al. reference. For example, Claim 26 includes the element, "a positive rail charge pump coupled to charge the positive ESD bus line to a predefined voltage level." Neither the Smith et al. nor the Ker et al. reference alone or in combination teach or suggest "a positive rail charge pump coupled to charge the positive ESD bus line to a predefined voltage level," as is disclosed and claimed in Claim 14 of the present application. The Examiner cites 810 and 816 of the Smith et al. reference as a charge pump. However, 810 and 816 are described in the Smith et al. reference as diodes. Please See Column 12, lines 41-44 and lines 50-54 of the Smith et al. reference. This is not what is claimed in Claim 26 as reproduced above. Since not every element is taught or suggested by the Smith et al. or the Ker et al. reference, a rejection under 103 was improper. Accordingly, the Applicant respectfully requests the withdrawal of the rejection of Claim 26 under 35 U.S.C. §103(a).

Moreover, since Claims 27-35 depend from and further define patentably distinct Claim 14, the Applicant also respectfully requests the withdrawal of the rejection of these dependant claims. Further, since the applicant believes these dependant claims are allowable for the above reason, further arguments addressing other rejections may not have been put forth at this time. The Applicant, however, retains the right to address said additional arguments if a further response is required.

Allowable Subject Matter

Claims 3, 17-21, 23-25, 32, 35 and 49 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 36-45, 50-57 were allowed.

Serial No.: 10/076,716

Filing Date: February 14, 2002

Attorney Docket No. 125.010US01

Title: ESD PROTECTION NETWORK UTILIZING PRECHARGE BUS LINES

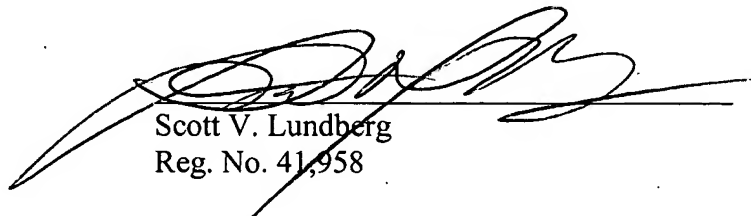
CONCLUSION

Applicant respectfully submits that claims 1-57 are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at (612) 332-4720.

Respectfully submitted,

Date: 12-9-03



Scott V. Lundberg
Reg. No. 41,958

Attorneys for Applicant
Fogg and Associates, LLC
P.O. Box 581339
Minneapolis, MN 55458-1339
T – (612) 332-4720
F – (612) 332-4731